

In the Claims:

1. (Currently Amended) An acetabular ~~impactor~~ inserter ~~(10, 10', 10'')~~ for aiding a surgeon in controlling the installation of a hip prosthesis ~~(11)~~, the ~~impactor~~ inserter comprising:
  - (a) an ~~impactor~~ inserter head ~~(20)~~;
  - (b) a housing ~~(12, 12', 12'')~~ attached to the ~~impactor~~ inserter head, the housing having at least one bend permitting the housing to avoid anatomical structures or tissue during use in surgery and enclosing a drive train ~~(14, 14', 14'')~~ having, at a far end ~~(134)~~, a prosthesis engaging thread ~~(124)~~, and at the opposite end ~~(42')~~, a handle ~~(20, 20', 20'')~~ which facilitates turning of the drive train by the operator; and
  - (c) a locking mechanism ~~(44, 50, 52, 54, 56, 60, 62, 67, 68, 124, 130, 142, 146, 180, 193, 194, 195, 196, 200, 202, 206, 210, 212, 14)~~ associated with the housing which selectively locks the drive train, and thus the prosthesis, in position, wherein further the opposite end ~~(42')~~ of the drive train has a latch device ~~(52, 54, 56, 60, 62, 44, 50, 180)~~ which enables quick removal from the housing for cleaning and sterilization.
  
2. (Withdrawn and Currently Amended) The acetabular ~~impactor~~ inserter of claim 1 ~~(10, 10', 10'')~~, wherein the drive train ~~(14, 14', 14'')~~ includes at least one u-joint ~~(30')~~ located so as to transmit torque through a bend in the housing ~~(12, 12', 12'')~~.

3. (Currently Amended) The acetabular ~~impactor~~ inserter ~~(10, 10', 10'')~~ of claim 1, wherein the housing ~~(12, 12', 12'')~~ is C-shaped.

4. (Withdrawn and Currently Amended) The acetabular ~~impactor~~ inserter ~~(10)~~ of claim 1, wherein the locking mechanism ~~(44, 50, 52, 54, 56, 60, 62, 67, 68)~~ comprises a drive train ~~(14)~~ having a threaded, prosthesis engaging tip ~~(146a)~~, the drive train further including a lever link ~~(42)~~ which is disposed in the housing (12) so as to rotate on a fulcrum ~~(32)~~, such that, actuation of the lever link draws the threaded tip ~~(146a)~~ into the housing and, when connected to a prosthesis ~~(11)~~, ~~draws~~ draws the prosthesis against an impaction surface ~~(140a)~~, wherein sufficient friction may be generated therebetween to lock the prosthesis in place.

5. (Withdrawn and Currently Amended) The acetabular ~~impactor~~ inserter ~~(10)~~ of claim 4, wherein the link lever ~~(42)~~ has a knob ~~(20)~~ attached to its extreme end, the knob enabling a user to orient the tip ~~(146a)~~.

6. (Withdrawn and Currently Amended) The acetabular ~~impactor~~ inserter ~~(10)~~ of ~~any one of claims 1-5~~ claim 5, wherein a lockable, variable length link ~~(56)~~ is attached between the link lever ~~(42)~~ and the housing ~~(12)~~ in order to permit a user to vary pressure that the tip can exert against the impaction head ~~(140)~~.

7. (Currently Amended) The acetabular ~~impactor~~ inserter ~~(10)~~ of claim 6, wherein the variable link ~~(56)~~ is infinitely variable and unlockable via a latch ~~(68)~~ in order to permit release of pressure on the prosthesis ~~(11)~~.

8. (Withdrawn and Currently Amended) The acetabular ~~impactor~~ inserter ~~(10)~~ of claim 7, wherein the prosthesis engaging tip ~~(146a)~~ is connected by way of a first U-joint ~~(30')~~ to a lever ~~(32)~~ which slides in a pivoting sleeve ~~(34)~~ fixed to the housing via a first pivot ~~(36)~~.

9. (Currently Amended) The acetabular ~~impactor~~ inserter ~~(10)~~ of claim 1, wherein a one-way catch mechanism ~~(67)~~ prevents a rod ~~(56)~~ connected to the second lever ~~(42)~~ from sliding out of the housing ~~(12)~~ unless an unlock lever ~~(68)~~ is activated.

10. (Currently Amended) The acetabular ~~impactor~~ inserter ~~(10, 10', 10'')~~ of claim 1, wherein the ~~impactor~~ inserter head ~~(20)~~ is covered by an ~~impactor~~ inserter head covering ~~(140)~~, made of a shock-absorbing material; in order to absorb the impact stresses incurred during use of the ~~impactor~~ inserter.

11. (Currently Amended) An acetabular ~~impactor~~ inserter ~~(10')~~ of claim 1, wherein the locking mechanism ~~(124, 130, 142, 146)~~ is an expandable collet ~~(120)~~ which a knob ~~(20')~~, adjacent the handle ~~(60)~~, expands when turned in one direction so as to lock the collet ~~(120)~~ against a surface of a prosthesis ~~(11)~~ in order to prevent the prosthesis from rotation, thus enabling the surgeon to pre-set and lock the position of the prosthesis prior to the installation thereof.

12. (Currently Amended) The ~~impactor~~ inserter ~~(10')~~ of claim 11, wherein the collet ~~(120)~~ is comprises of two jaws ~~(124)~~ having opposite ends ~~(125, 126)~~ pivoting on a fulcrum ~~(32)~~, one end of which being adapted to engage an interior surface of a prosthesis ~~(11)~~, the prosthesis engaging ends being drawn away from one another when a actuator piston ~~(146)~~, which passes through the fulcrum ~~(130)~~, is draw therebetween, ~~thereby eliminating the need of threading the acetabular prosthesis (11) onto the tip (125) of the impactor as the prosthesis can simply be placed over the collet and the collet expanded so as to grip the internal threads (122) of the prosthesis.~~

13. (Currently Amended) The ~~impactor~~ inserter ~~(10')~~ of claim 12, wherein the fulcrum ~~(32)~~ is mounted in a cage ~~(142)~~ through which the actuator piston ~~(146)~~ passes, the actuator piston having a shoulder ~~(143)~~ bearing against a surface ~~(142')~~ of the cage opposite the prosthesis engaging ends ~~(125)~~ of the jaws ~~(124)~~, such that, as the actuator piston is being activated to separate the prosthesis engaging ends of the jaws, a shoulder ~~(146e)~~ of the piston contacting the surface compresses the jaws into the cage, thereby drawing the jaws into the ~~impactor~~ inserter and, when connected ~~[[so]]~~ to a prosthesis, thereby drawing the prosthesis against an impaction surface ~~(140a)~~ so as to firmly fix the prosthesis against the impaction surface.

14. (Currently Amended) The ~~impactor~~ inserter ~~(10')~~ of claim 13, wherein the collet ~~(120)~~ is provided with external, three-dimensional structures ~~(124)~~ which engage with corresponding structures ~~(122)~~ on the prosthesis ~~(11)~~.

15. (Currently Amended) The ~~impactor~~ inserter ~~(10')~~ of claim 14, wherein the three dimensional structures are threads ~~(122)~~.

16. (Currently Amended) The ~~impactor~~ inserter ~~(10')~~ of claim 14, wherein the three-dimensional structures are grooves.

17. (Currently Amended) The ~~impactor~~ inserter ~~(10')~~ of claim 14, wherein the three-dimensional structures are divots.

18. (Currently Amended) The acetabular ~~impactor~~ inserter ~~(10')~~ of claim 11, wherein the drive train ~~(14')~~ includes at least one u-joint ~~(30')~~ located so as to transmit torque through a bend in the housing ~~(12')~~.

19. (Currently Amended) The acetabular ~~impactor~~ inserter ~~(10')~~ of claim 11, wherein the housing ~~(12')~~ is C-shaped.

20. (Withdrawn and Currently Amended) The acetabular ~~impactor~~ inserter ~~(10')~~ of claim 1, wherein further, the locking mechanism ~~(180, 193, 194, 195, 196, 200, 202, 206, 210, 212)~~ is made up of a latch housing ~~(180)~~ which is constrainable against rotation while being urged part-way into a recess ~~(184)~~ toward the engagement end ~~(186)~~ of an impactor head ~~(140)~~ by a spring ~~(190)~~ captured between the latch housing ~~(180)~~ and a shaft ~~(212)~~ of the drive train, the spring urging the latch housing against a cam stop ~~(194)~~ when a trigger ~~(196, 200)~~ is positioned so as to selectively,

- i) enable the drive train to be turnable within the housing ~~(12')~~ by the operator rotating the handle ~~(160)~~, the cam stop ~~(194)~~ being connected to a shaft ~~(200)~~ to which an actuator component ~~(196)~~ is

attached,

- ii) enable a user to turn the cam stop ~~(194)~~ in a position to block further movement of the latch housing ~~(180)~~ into the recess ~~(184)~~, such that when the cam stop is turned so that it does not block further entry of the latch housing into the recess ~~(184)~~, catches ~~(206)~~ inside the latch housing are urged into engagement with serrations ~~(210)~~ cut into the outer circumference of a component ~~(212)~~ of the drive train, wherein the engagement of the catches ~~(206)~~ into the serrations ~~(210)~~ constrains the latch housing ~~(190)~~ against rotational movement and locks the drive train ~~(14'')~~ against rotational movement, the selectivity enabling the surgeon to pre-set and lock the position of the prosthesis ~~(11)~~ prior to the installation thereof, wherein the latch housing ~~(180)~~ may be unlatched from the housing so as to enable quick and invention is easily cleanable.

21. (Currently Amended) The acetabular ~~impactor~~ insertor ~~(10'')~~ of claim 1, wherein the housing ~~(12'')~~ is C-shaped in order to minimize the invasiveness of the surgery by better clearing anatomical structures and tissue.